## AMENDMENTS TO THE CLAIMS

The following listing of the claims replaces all previous listings.

1. (Original) A method of producing volume renderings from magnetic resonance image data in real time with user interactivity, the method comprising:

collecting magnetic resonance image (MRI) data representative of shapes within an image volume;

transferring the MRI data to a computer; and

producing a volume rendering from the MRI data in real time with respect to the act of collecting MRI data representative of shapes within the image volume.

2. (Original) The method of claim 1 wherein the acts of collecting MRI data, transferring the MRI data to a computer, and producing a volume rendering are performed continuously.

3. (Presently Amended) The method of claim 2 wherein the act of producing a volume rendering from the MRI data includes ~~rending~~ rendering a plurality of two-dimensional image slices.

4. (Original) The method of claim 3 wherein the act of collecting MRI data representative of shapes within an image volume includes executing a two-dimensional pulse sequence using view sharing between even and odd echoes.

5. (Original) The method of claim 2 wherein the act of producing a volume rendering from the MRI data includes rendering a three-dimensional rectilinear slab.

6. (Original) The method of claim 5 wherein the act of collecting MRI data representative of shapes within an image volume includes executing a three-dimensional pulse sequence using view sharing between even and odd echoes.

7. (Original) The method of claim 2 wherein the act of producing a volume rendering includes:

reconstructing image data from the MRI data, the reconstructed image data being organized into sets of image slices; and

displaying the reconstructed image data on a monitor to form a volume rendering.

8. (Original) The method of claim 7 wherein each image slice is formed from a set of reconstructed image data and the act of displaying the reconstructed image slices includes displaying each reconstructed image slice after all of the set of reconstructed image data is complete.

9. (Original) The method of claim 7 wherein each image slice is formed from a set of reconstructed image data and the act of displaying the reconstructed image slices includes displaying at least a portion each reconstructed image slice before the entire set of reconstructed image data is complete.

10. (Original) The method of claim 2 wherein the act of producing a volume rendering includes:

reconstructing image data from the MRI data, the reconstructed image data being organized into a rectilinear slab; and

generating a volume rendering from the rectilinear slab of reconstructed image data; and

displaying the volume rendering on a monitor.

11. (Original) The method of claim 10 wherein the acts of generating and displaying the volume rendering are completed after the act of reconstructing image data is complete for the entire rectilinear slab.

12. (Original) The method of claim 10 wherein the acts of generating and displaying the volume rendering are completed after the act of reconstructing image data is complete for at least a portion of the rectilinear slab.

13. (Presently Amended) The method of claim 2 wherein:

the act of ~~rending~~ rendering a volume from magnetic resonance imaging data includes the act of displaying the volume rendering on a monitor; and

the delay (latency) between the act of collecting MRI data and the act of displaying the volume rendering is equal to or less than about one third of a second.

14. (Original) The method of claim 13 wherein the act of displaying the volume rendering on a monitor includes displaying the volume rendering on a monitor at a rate of about 10 or more frames per second.

15. (Original) The method of claim 13 wherein the act of displaying the volume rendering on a monitor includes the act of displaying the volume rendering on the monitor using alpha blending.

16. (Original) The method of claim 13 wherein the act of displaying the volume rendering on a monitor includes the act of displaying the volume rendering on the monitor using maximum intensity projections.

17. (Original) The method of claim 2 wherein:

the method further comprises determining the position of a cut plane through the volume rendering; and

the act of producing a volume rendering includes displaying the image data on only one side of the cut plane.

18. (Original) The method of claim 2 wherein:

the act of rendering a volume from the MRI data includes displaying the volume rendering on a monitor, the displayed volume rendering having a view; and

the act of collecting (MRI) data representative of shapes within an image volume includes scanning an image volume so that the MRI data is organized into image planes orthogonal to the view of the volume rendering displayed on the monitor.

19. (Original) An apparatus for producing volume renderings from magnetic resonance image data in real time, the apparatus comprising:

a magnetic resonance image (MRI) scanner configured to generate MRI data representative of shapes within an image volume; and

a computer in data communication with the MRI scanner, the computer configured to receive the MRI data from the MRI scanner and to produce a volume rendering from the MRI data in real time with respect to the act of collecting the MRI data.